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DepED
DEPARTMENT OF EDUCATION

# Learning Activity Sheet for Science

Quarter 3

Lesson

7

**Worksheet for Science Grade 7**
**Quarter 3: Lesson 7 (Week 7)**
**SY 2024-2025**



**Development Team**

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**LEARNING ACTIVITY SHEET**

| | | | |
|---|---|---|---|
| **Learning Area:** | Science | **Quarter:** | 3rd Quarter |
| **Lesson No.:** | 7 | **Date:** | |
| **Lesson Title/ Topic:** | **Heat** | | |
| **Name:** | | **Grade & Section:** | |

**I. Activity 1: Reading of a Story** (15 minutes)

**II. Objectives:** To appreciate the concept of heat and temperature in a real-life situation

**III. Materials Needed:** worksheet, writing materials (ballpen, pencil, etc.)

**IV. Procedure:** Let students read the story and answer the questions that follow.

**'Sorbetes' Adventure in Rizal Park**
(Author Unknown)

*It's a sunny afternoon in Rizal Park, and the air is filled with laughter and the sound of children playing. Families stroll along the pathways, taking in the sights and sounds of this iconic park. Amidst the bustling activity, there's a quaint little cart adorned with colorful umbrellas and a sign that reads "Sorbetes sa Rizal Park."*

*As you approach the cart, you're greeted by the friendly smile of Mang Romy, the sorbetes vendor. Behind him, rows of metal cylinders filled with ice cream flavors in vibrant hues beckon you to indulge in a sweet treat. The aroma of freshly made waffle cones wafts through the air, adding to the allure of the experience.*

*You join the queue of eager customers, eagerly anticipating your turn to sample the delights of sorbetes. As you wait, you strike up a conversation with fellow park-goers, sharing stories and laughter while soaking in the warm ambiance of the park.*

*Finally, it's your turn to place your order. You peer into the cart, marveling at the array of flavors available – from classic favorites like ube (purple yam) and mango, to more exotic offerings like buko pandan (coconut pandan) and langka (jackfruit). With a smile, Mang Romy scoops generous servings of your chosen flavors into a freshly made cone, expertly twirling it to perfection.*

*You take your first bite, savoring the creamy texture and rich flavor of the sorbetes. The cool sweetness provides a refreshing contrast to the warmth of the afternoon sun, making it the perfect indulgence on a hot day. As you stroll through the park, enjoying your sorbetes, you can't help but feel a sense of contentment and nostalgia, cherishing the simple joys of life in this bustling metropolis.*

*As the day draws to a close and the sun begins to set, you bid farewell to Rizal Park, your heart full of fond memories and your taste buds tingling with the lingering sweetness of sorbetes. Until next time, you look forward to returning to this beloved corner of Manila, where the tradition of sorbetes continues to bring joy to all who visit.*

**Guide Questions:**

1. How do you feel about the story?
   _____
   _____
2. Why are Filipinos fond of eating 'sorbetes'?
   _____
   _____
3. How is the concept of heat and temperature related to the story?
   _____
   _____

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**I. Activity 2: Investigating Heat and Temperature** (30 minutes)

**II. Objectives:** Observe how heat moves between objects of different temperatures

**III. Materials Needed:** 3 Clear Glasses, 1 Metal Spoon, Cold Water, Hot Water, tap Water, Thermometer (optional), Stopwatch or Timer, Paper and Pen (for recording observations)

**IV. Procedure:**

*Step 1: Preparation*

1. Fill the first glass with cold water.
2. Fill the second glass with hot water (Be cautious to avoid burns!).
3. Fill the third glass with tap water.
4. Place all three glasses on a flat surface.

*Step 2: Initial Observations*

1. Record the initial temperature of the cold water, hot water, and tap. If a thermometer is unavailable, simply note their relative temperatures (cold, hot, tap).

*Step 3: Heat Transfer from Spoon to Water*

1. Place the metal spoon in the hot water glass for 1 minute.
2. After 1 minute, quickly move the spoon to the tap water glass. Observe and note any changes.
3. After 1 minute, move the spoon from the tap water to the cold water glass. Observe and note changes.

*Step 4: Heat Transfer from Water to Spoon*

1. Place the metal spoon in the cold water glass for 1 minute.
2. After 1 minute, quickly move the spoon to the room temperature water glass. Observe and note any changes.
3. After 1 minute, move the spoon from the room temperature water to the hot water glass. Observe and note any changes in temperature.

*Step 5: Continuous Observation*

1. Leave the spoon in the hot water for an additional 2 minutes. Observe and note any changes every 30 seconds. Use a thermometer to determine changes in temperature.
2. Repeat the above step with the spoon in the cold water for 2 minutes, noting changes every 30 seconds.

3. Use a table to record the temperature changes and any observations about the state of the water or spoon. Include the time and description of what you observe.

| Category | Temperature Readings | | | | |
|---|---|---|---|---|---|
| | **Initial State (0 minutes)** | **After 1 minute** | **After 2 minutes** | **After 3 minutes** | **After 4 minutes** |
| Spoon in Hot Water | | | | | |
| Temperature of the Spoon in Room Temp (tap) Water | | | | | |
| Spoon in Cold Water | | | | | |

**Guide Questions:**

1. What happened to the temperature of the water in each glass when the spoon was transferred?

   _____
   _____
   _____

2. How did the spoon feel when you moved it from hot to room temperature water and then to cold water?

   _____
   _____
   _____

3. What can you conclude about heat transfer from your observations?

   _____
   _____
   _____

4. How did the temperature of the spoon change when placed in hot, room temperature, and cold water?

   _____
   _____
   _____

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| **Learning Area:** | Science | **Quarter:** | 3rd Quarter |
| **Lesson No.:** | 7 | **Date:** | |
| **Lesson Title/ Topic:** | **Thermal Conductors and Insulators** | | |
| **Name:** | | **Grade & Section:** | |

**I. Activity 3: Reading a Story** (15 minutes)

**II. Objectives:** To appreciate situations with objects that are thermal conductors and insulators

**III. Materials Needed:** worksheet, writing materials (ballpen, pencil, etc.)

**IV. Procedure:** Read the story below and answer the guide questions that follow.

**Maya's Thermal Adventure: Sorting Sorcery**
Author Unknown

*Once upon a time, in a cozy little town nestled amidst rolling hills and lush forests, there lived a curious girl named Maya. Maya was known for her love of science and her insatiable thirst for knowledge. One sunny afternoon, as Maya sat in her room surrounded by her toys and treasures, she embarked on an exciting quest - to sort her belongings into categories of thermal conductors and insulators.*

*With determination sparkling in her eyes, Maya began her sorting sorcery. She picked up her favorite toy, a shiny metal robot, and held it in her hand. Feeling its coolness against her skin, Maya declared it a thermal conductor, knowing that metals were excellent at transferring heat. Next, Maya reached for her soft, fluffy teddy bear and hugged it tightly. As the warmth enveloped her, Maya smiled and labeled her teddy bear as a thermal insulator, understanding that its plush fur trapped heat and kept her snuggly warm.*

*Moving on to her collection of pencils and pens, Maya observed their wooden bodies and decided they belonged in the thermal insulator category, as wood was not known for conducting heat efficiently. However, she held onto her metal pencil case and placed it in the conductor section. She then came across her plastic toys and gadgets, noting their ability to feel neither hot nor cold to the touch. With a nod of approval, Maya categorized them as thermal insulators too.*

*As Maya sorted through her belongings, she marveled at the wonders of thermal conductivity and insulation. Each item told its own story, from the metallic chill of her robot to the comforting warmth of her teddy bear. With each object carefully categorized, Maya felt a sense of accomplishment wash over her.*

*As the sun began to set and the golden rays cast a warm glow through her window, Maya sat amidst her sorted treasures, feeling grateful for the knowledge she had gained. With a contented smile, Maya knew that her sorting adventure had not only taught her about thermal properties but had also ignited her curiosity to explore the wonders of science further.*

*And so, in the magical world of Maya's room, where toys and treasures came to life through the lens of science, the sorting sorcery of thermal conductivity and insulation became a tale to be cherished forevermore.*

**Guide Questions:**

1. Complete the diagram below to show how Maya sorted her toys:

| Toys that are conductors | Toys that are insulators |
|---|---|
| | |

2. What are Maya's bases for sorting her toys as to conductors or insulators? Are her basis correct or not? Why?

_____
_____
_____
_____
_____
_____
_____
_____
_____

3. How will you describe thermal conductors? Thermal insulators?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

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**I. Activity 7: Classifying materials as to Conductors or Insulators (Group Activity)** (30 minutes)

**II. Objectives:** To classify materials as thermal conductors or insulators by touching.

**III. Materials Needed:** worksheet, writing materials (ballpen, pencil, etc.); The following materials must be brought to the classroom and placed on a table at least one hour before the start of classes: metal spoon, beaker, aluminum ladle, ballpen, P10 coin, plastic spoon, wooden spoon, iron nail, acetate, steel bar, porcelain mug, floor tile, handkerchief, cardboard

**IV. Procedure:**

1. Lay down all the materials on a table.
2. Using your hand, hold the material in your hand for about 5 seconds, and record what you feel (cold, neutral, warm) by checking the appropriate column in the table. Neutral means it does not feel cold or hot at all.
3. Let another member of the group hold the material for 10 seconds or more after the first student, Record the sensation felt by checking the appropriate column in the table. All members of the group should hold the materials. The column with the most frequency will be considered the answer for the group (majority prevails). Discuss among your group your final answer.

Table 1.

| **Material** | **Sensation** | | | **Remarks** | |
|---|---|---|---|---|---|
| | **Cold** | **Neutral** | **Warm** | **Conductor** | **Insulator** |
| 1.Metal spoon | | | | | |
| 2.Plastic spoon | | | | | |
| 3.Porcelain mug | | | | | |
| 4.Beaker | | | | | |
| 5.wooden spoon | | | | | |
| 6.Floor tile | | | | | |
| 7.Aluminum ladle | | | | | |
| 8.Iron nail | | | | | |
| 9.Handkerchief | | | | | |
| 10.Plastic Ballpen | | | | | |
| 11.Acetate | | | | | |
| 12.Cardboard | | | | | |
| 13.P10 coin | | | | | |
| 14. Steel bar | | | | | |

**Guide questions:**

1. Which materials are conductors? Which Materials are insulators?

2. How did you classify materials as insulators and conductors?

3. Are your sensations reliable for determining if a material is a conductor insulator? If not, what process can be best done?

4. Why is it important to know if a material is an insulator or a conductor?